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MAP30/40/42 SERIES

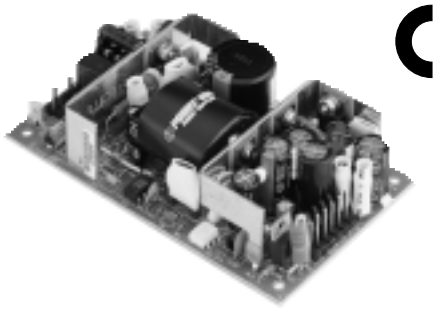
Power-One's MAP30/40/42 series of power supplies combines low cost and universal input in a board-only power solution to meet commercial and industrial requirements. Full international safety, EMI, and ESD compliance ensure world-wide acceptance. All units bear the CE Mark.

Fixed frequency operation simplifies system level operation. The MAP30/40/42 series is configured to the international standard 3.00" x 5.00" footprint. Input and output connections are made via popular single row Molex connectors.

Single output models feature wide-range output adjustability to meet a wide variety of standard and user specific output voltage requirements.

FEATURES

- Universal Input 85-264 VAC
- CE Marked to Low Voltage Directive
- Input Transient & ESD Compliance to EN61000-4-2/-3/-4
- Meets EN55022 Conducted and Radiated Limits
- Greater than 311,000 Hours MTBF
- Remote Sense (MAP30, MAP42)



SINGLE OUTPUT MODEL SELECTION CHART

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT	PEAK OUTPUT CURRENT (NOTE 2)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 1)	INITIAL SETTING ACCURACY
MAP30-1005	5V	4.7V to 5.8V	6A	8A	0.2%	±1%	1%	4.9V to 5.1V
MAP42-1005	5V	4.7V to 5.8V	8A	11A	0.2%	±1%	1%	4.9V to 5.1V
MAP42-1012	12V/15V	11.0V to 18.0V	3.4/2.7A (Note 3)	4.6/3.7A (Note 3)	0.2%	1%	1%	11.9V to 12.1V
MAP42-1024	24V/28V	23.0V to 29.0V	1.7/1.4A (Note 3)	2.3/1.9A (Note 3)	0.2%	1%	1%	23.8V to 24.2V

NOTES: 1) Maximum peak to peak noise expressed as a percentage of output voltage, 20MHz bandwidth.
2) Peak ratings may be used as maximum output current with 100 Linear Feet per Minute (LFM) forced air cooling.
3) MAP42-1012 output currents are expressed as 12V/15V operation. MAP42-1024 output currents are expressed as 24V/28V operation.

MULTIPLE OUTPUT MODEL SELECTION CHART – 40W CONTINUOUS OUTPUT POWER

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT	PEAK OUTPUT CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
MAP40-3000	+5V	4.75V to 5.50V	3A	5A	0.2%	2%	1%	4.9V to 5.1V
	+12V	Fixed	2A	3.5A	1%	3.5% (Note 3)	1%	11.5V to 12.5V
	-12V	Fixed	0.3A	0.5A	1%	2% (Note 4)	1%	-11.4V to -12.6V
MAP40-3100	+5V	4.75V to 5.25V	3A	5A	0.2%	2%	1%	4.9V to 5.1V
	+12V	Fixed	2A	3.5A	1%	3.5% (Note 3)	1%	11.5V to 12.5V
	-12V	Fixed	0.3A	0.5A	1%	2%	1%	-11.4V to -12.6V
MAP40-3101	+5V	4.75V to 5.25V	3A	5A	0.2%	2%	1%	4.9V to 5.1V
	+24V	Fixed	1A	1.5A	1%	3.5% (Note 3)	1%	23.0V to 25.0V
	-12V	Fixed	0.3A	0.5A	1%	2%	1%	-11.5V to -12.5V
MAP40-3105	+5V	4.7V to 5.8V	3A	5A	0.2%	2%	1%	4.9V to 5.1V
	+12	Fixed	2A	3.5A	1%	3.5% (Note 3)	1%	11.5V to 12.5V
	-5V	Fixed	0.5A	1.0A	1%	2%	1%	-4.75V to -5.25V
MAP40-3500	+5V	4.7V to 5.8V	5A	6A	0.2%	2%	1%	4.9V to 5.1V
	+12V	Fixed	1A	3.5A	1%	3.5% (Note 3)	1%	11.5V to 12.5V
	-12V	Fixed	0.3A	0.5A	1%	2%	1%	-11.4V to -12.6V
MAP40-3003	+5V	4.7V to 5.8V	3A	5A	0.2%	2%	1%	4.9V to 5.1V
	+15V	Fixed	1.5A	3A	1%	3.5% (Note 3)	1%	14.7V to 15.3V
	-15V	Fixed	0.2A	0.5A	1%	2% (Note 4)	1%	-14.3V to -15.7V

NOTES : 1) Peak loads for 30 seconds or less are acceptable, (10% duty cycle max.).
2) Maximum peak to peak noise expressed as a percentage of output voltage, 20MHz bandwidth.
3) Quasi regulated output. See Regulation Curves for more information.
4) Requires a minimum load of 0.5A on V1 or 0.3A on V2.

NUCLEAR AND MEDICAL APPLICATIONS Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Power-One, Inc.

TECHNICAL REVISIONS The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

MAP30/40/42 SERIES

INPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Input Voltage - AC	Continuous input range.	MAP42	85		264	VAC
		MAP30, MAP40	90		264	
Input Frequency	AC input.		47		63	Hz
Brown Out Protection	Lowest AC input voltage that regulation is maintained with full rated loads.		85			VAC
Hold-up Time	Nominal AC Input Voltage (115VAC), full rated load.		15			mS
Input Current	90 VAC (40W load).				1.2	ARMS
Input Protection	Non-user serviceable internally located AC input line fuse.					
Inrush Surge Current	Internally limited by thermistor. Vin = 264VAC (one cycle). 25° C.				38	APK
Operating Frequency	Switching frequency of power supply (fixed frequency).		23	25	30	kHz

OUTPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full load, 120VAC.		70		%
Minimum Loads	Single output models; MAP30, MAP42. All multiple output models, see regulation graphs.	0.0			Amps
Ripple and Noise	Full load, 20MHz bandwidth.			See Model Selection Chart.	
Output Power	Multiple output models with convection cooling.			40	Watts
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on, V1.			1	%
Regulation	Varies by output, total regulation includes: Line changes from 90-132 VAC or 175-264, changes in load starting at 20% load and changing to 100% load.		See regulation graphs.		
Transient Response	Recovery time, to within 1% of initial set point due to a 50-100% load change, 4% max. deviation. (Main output only of multiple output units).		500		µS
Turn-on Delay	Time required for initial output voltage stabilization.		1	2	Sec
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90%.		20		mS

INTERFACE SIGNALS AND INTERNAL PROTECTION

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Overvoltage Protection		MAP30-1005, MAP42-1005	5.8		6.8	V
		MAP42-1012	20.0		22.0	
		MAP42-1024	32.0		37.0	
		Main output only of multiple output units.	5.8		6.8	
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition.			130		%
Remote Sense	Total cable drop, single output models only.				250	mV

SAFETY, REGULATORY, AND EMI SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Agency Approvals	UL1950. CSA 22.2 No. 234/950. EN60950 (TUV).			Approved.		
Dielectric Withstand Voltage	Input to output.		2600			VDC
Electromagnetic Interference	FCC CFR title 47 part 15 sub-part B - conducted.			B		Class
	EN55022 / CISPR 22 conducted (Note 1).			B		
	EN55022 / CISPR 22 radiated (Note 2).			B		
Input Transient Protection	EN61000-4-5 Level 3	Line to Line	1			kV
		Line to Ground	2			
Insulation Resistance	Input to output.		7			MΩ
Leakage Current	Per EN60950, 264VAC	MAP42, MAP40-3100, 3001, 3105, 3500			500	µA
		MAP30-1005, MAP40-3000, MAP40-3003			750	

NOTES: 1) MAP30-1005, MAP40-3000, MAP40-3003 meet Class A.
2) MAP40-3000, MAP40-3003, MAP3500 meet Class A.

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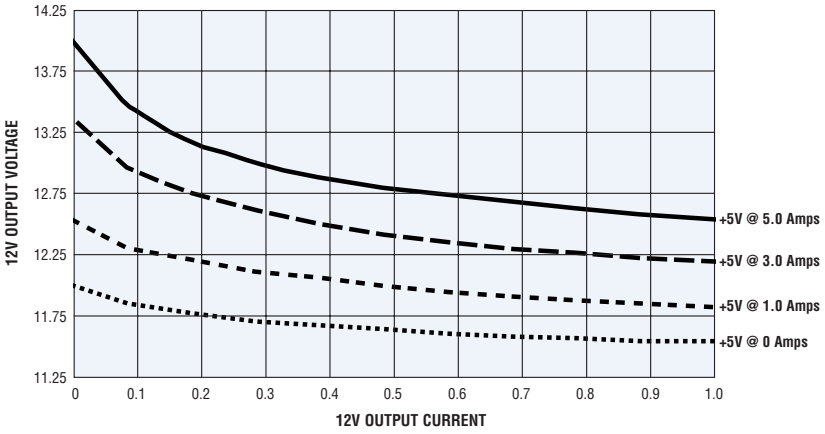
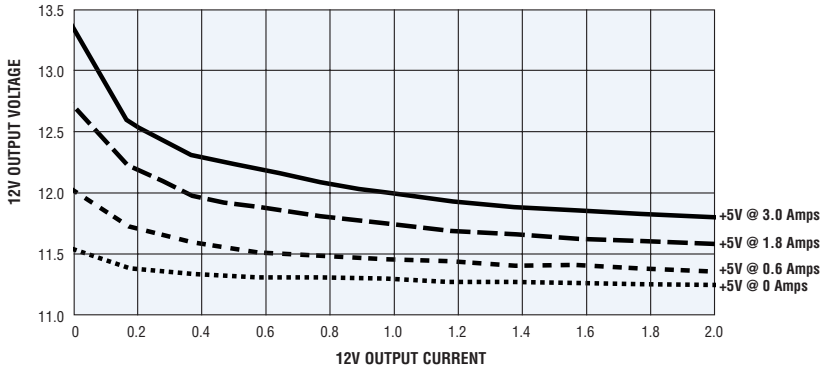
ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Altitude	Operating.				10k	ASL Ft.
	Non-operating.				40k	ASL Ft.
Operating Temperature	Derate linearly above 50°C by 2.5%	At 100% load:	0		50	°C
	per °C to a maximum temperature of 70°C.	At 50% load:	0		70	°C
Storage Temperature			-40		85	°C
Temperature Coefficient	0°C to 70°C (after 15 minute warm-up).			±0.02	±0.03	%/°C
Relative Humidity	Non-condensing.		5		95	%RH
Shock	Operating, peak acceleration.				20	G
Vibration	Random vibration, 10Hz to 2kHz, 3 axis.				6	GRMS

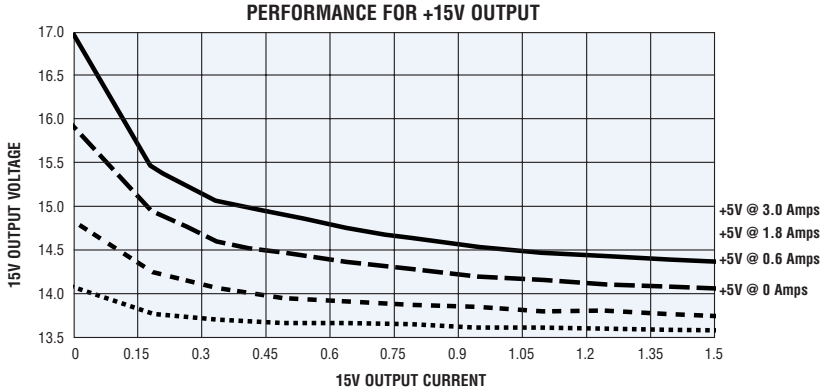
MAP40-3500 TYPICAL QUASI REGULATION PERFORMANCE FOR +12V OUTPUT



MAP40-3000/3100/3105 TYPICAL QUASI REGULATION PERFORMANCE FOR +12V OUTPUT

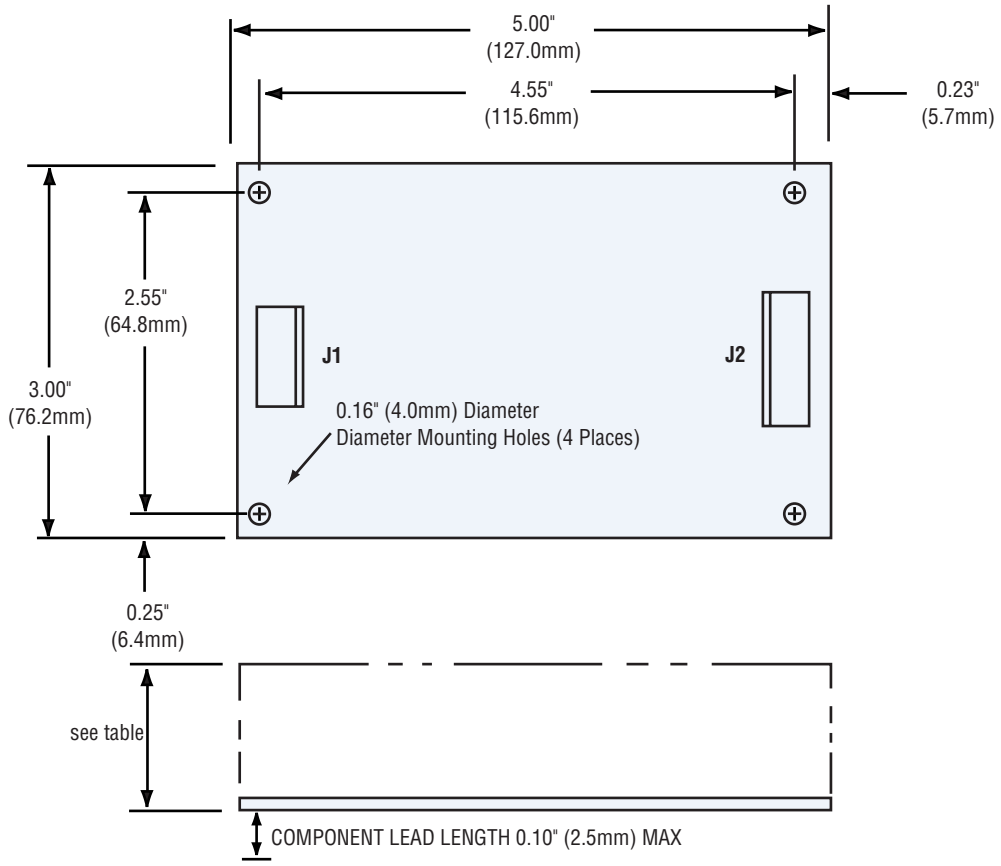


MAP40-3003 TYPICAL QUASI REGULATION PERFORMANCE FOR +15V OUTPUT

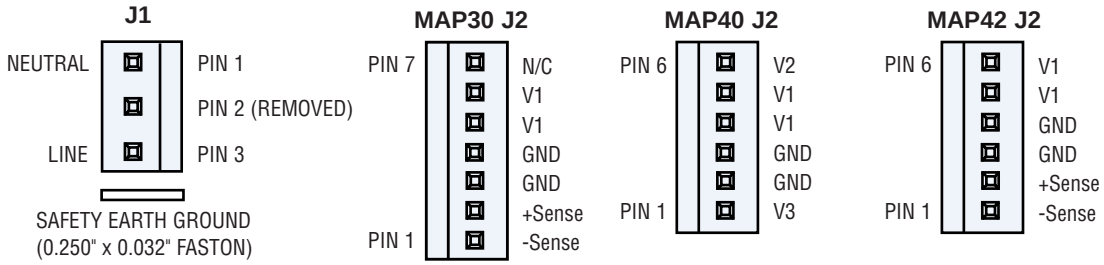


MAP30/40/42 SERIES

OVERALL SIZE: 5.00" x 3.00" x (see table) (127.0mm x 76.2mm x see table)
WEIGHT: 0.6 LBS (0.26 kg)



ELECTRICAL CONNECTORS



J1/J2 MATES WITH MOLEX (SERIES 2139 or SERIES 41695) .156" (4mm) CENTER CRIMP TERMINAL HOUSING OR EQUIVALENT

MAP30/40/42 SERIES HEIGHT

Single Output Models		Multiple Output Models	
Model	**Height**	**Model**	**Height**
MAP30-1005	1.16" (29.5)	MAP40-3000	1.16" (29.5)
MAP42-1005	1.25" (31.8)	MAP40-3003	1.16" (29.5)
MAP42-1012	1.25" (31.8)	MAP40-3100	1.25" (31.8)
MAP42-1024	1.25" (31.8)	MAP40-3101	1.25" (31.8)
		MAP40-3105	1.25" (31.8)
		MAP40-3500	1.60" (40.6)